



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/648,939

08/27/2003

Robert A. Penchuk

A0312.70480 US00

5934

7590

12/14/2004

Steven J. Henry  
Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, MA 02210

EXAMINER

LE, VU ANH

ART UNIT

PAPER NUMBER

2824

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

10/648,939

**Applicant(s)**

PENCHUK, ROBERT A.

**Examiner**

Vu A. Le

**Art Unit**

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Itoh (5,220,530).

Itoh (Fig.2) discloses a memory cell, comprising: a charge storage element (charge storage layer 35, col.1, line 38), a one-transistor switch (34) constructed and arranged to selectively connect the storage element to a first data line (40), responsive to a first select signal (39), and a one-transistor gain element (33) having an input connected to receive a signal from the storage element and constructed and arranged to selectively provide a corresponding output signal to a second data line (read BL 37), responsive to a second select signal (38), wherein the one-transistor switch and the one-transistor gain element are FET (col.1, lines 27-33).

3. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Emori et al (6,314,017).

Emori et al (Fig.21) discloses a memory cell, comprising: a charge storage element (C1), a one-transistor switch (Q1) constructed and arranged to selectively connect the storage element to a first data line (write bit line, WBL), responsive to a first select signal (write WL, WWL), and a one-transistor gain element (Q2) having an input connected to receive a signal from the storage element and constructed and arranged to selectively provide a corresponding output signal to a second data line (read BL, RBL), responsive to a second select signal (Vcc), wherein the one-transistor switch and the one-transistor gain element are FET (Fig.21).

4. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Noble (6,246,083).

Noble (Fig.2) discloses a memory cell, comprising: a charge storage element (110), a one-transistor switch (36) constructed and arranged to selectively connect the storage element to a first data line (60), responsive to a first select signal (65), and a one-transistor gain element (28) having an input connected to receive a signal from the storage element and constructed and arranged to selectively provide a corresponding output signal to a second data line (read BL 90), responsive to a second select signal (95), wherein the one-transistor switch and the one-transistor gain element are FET (col.6, lines 10-20), wherein the first select signal line and the second select signal line are orthogonally disposed.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
6. Worley (6,016,268) discloses a three transistor multi-state dynamic memory cell for embedded CMOS logic application.
7. Bertin et al (5,909,400) disclose a three device BiCMOS gain cell.
8. Smith (3,882,372) discloses a 2T gain cell structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu A. Le whose telephone number is (571) 272-1871. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2824

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vu A. Le  
Primary Examiner  
Art Unit 2824

12/12/04